

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:  
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## PCT

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (date/month/year)      17 December 2004 (17-12-2004)

Applicant's or agent's file reference  
**PYXIS-PCT-1**

**FOR FURTHER ACTION**  
 See paragraph 2 below

International application n<sup>o</sup>  
**PCT/CA2004/001507**

International filing date (date/month/year)  
 26 juillet 2004 (26-07-2004)

Priority date (date/month/year)  
 01 août 2003 (01-08-2003)

International Patent Classification (IPC) or both national classification and IPC  
 IPC<sup>7</sup> G06T-9/00 G06T-12/00

Applicant    **PETERSON PERRY**

**1. This opinion contains indications relating to the following items :**

- |                                     |              |  |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the opinion   |
| <input type="checkbox"/>            | Box No. II   | Priority   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention   |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited  |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application   |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application  |

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA/  
 Commissioner of Patents  
 Canadian Patent Office  
 Box PCT, Ottawa/Gatineau K1A 0C9

Authorized officer

Serge Carrier (819) 997-2322

Facsimile No. (819) 953-9538

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
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**Box No. I**      **Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language which it was filed, unless otherwise indicated under this item.

- ☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format  
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments :

Box No. II      Priority

1      ☐      The following document has not yet been furnished :

☐      copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐      translation of the earlier application whose priority has been claimed (rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2      ☐      This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purpose of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary :

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of :

☐ the entire international application

☐ claims Nos. \_\_\_\_

because

☐ the said international application, or the said claims Nos. \_\_\_\_ relate to the following subject matter which does not require an international preliminary examination (*specify*) :

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. \_\_\_\_ are so unclear that no meaningful opinion could be formed (*specify*) :

☐ the claims, or said claims Nos. \_\_\_\_ are so inadequately supported by the description that no meaningful opinion

☐ no international search report has been established for said claims Nos. \_\_\_\_.

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that :

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See Supplemental Box for further details.

**Box No. IV      Lack of unity of invention**

- 1    ☐    In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has :
- ☐    paid additional fees
- ☐    paid additional fees under protest
- ☐    not paid additional fees
- 2    ☐    This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
- 3    This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐    complied with
- ☐    not complied with for the following reasons :
- 4    Consequently, this opinion has been established in respect of the following parts of the international application :
- ☐    all parts
- ☐    the parts relating to claims Nos. \_\_\_\_\_

**Box No. V reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	2-6, 8-21	YES
	Claims	1,7	NO
Inventive step (IS)	Claims	6, 12, 13	YES
	Claims	1-5, 8-11, 14-21	NO
Industrial applicability (IA)	Claims	1-21	YES
	Claims	none	NO

**2. Citations and explanations :**

D-1 Kevin Sahr et al., "Geodesic Discrete Global Grid Systems", Cartography and Geographic Information Science, Vol. 30, No. 2, April 2003, pp. 121-134.

D-2 US-6,384,826 (Bern et al.), May 7, 2002

Document D-1 is considered the closest prior art.

**Novelty:**

In document D-1 there is disclosed a Geodesic Discrete Global Grid System (DGGSs) which consists of a set of regions forming a partition of the Earth's surface where each region has a single point contained in the region associated with it. Each region/point is a cell and the centroids of the regions form a suitable set of associated points. The Voronoi regions of those points form an obvious set of associated cell regions (p. 121). DGGS is a series of discrete global grids which consist of increasingly finer resolution grids (p. 122). The system is based on icosahedron or hexagon partition (see abstract, pages 127-128 and Fig. 7).

Claim 1 defines a method for storing two-dimensional data in one-dimensional space by mapping attributes of continuous state planar space to a multi-resolution tessellation of uniform cells. The method comprises the steps of assigning spatial attributes to a parent cell whose centroid represents its location and the Voronoi region created by the boundary with adjacent cells. The cells are arranged in parent/child groups having multiple resolutions. Claim 7 further defines that the method is for a discrete global grid system.

The subject matter of claims 1 and 7 is not considered novel in view of document D - 1 (PCT Article 33(2)).

**Inventive Step:**

Dependent claims 2 - 5 and 8 - 11 further define different clustering modes. These different modes are part of the common knowledge in the art of cell clustering. Therefore the subject matter of these claims is not considered inventive in view of D - 1 (PCT Article 33(3)).

Dependent claims 14 to 21 further define software instructions to mathematically convert georeference spatial data. The subject matter of these claims is not considered inventive in view of D - 1 (PCT Article 33(3))) because they are claiming a software implemented solution based on the previous method/system claims.

**Industrial applicability:**

Claims 1 to 21 meet the requirement of industrial applicability as defined in PCT Article 33(4).

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**Box No. VI**

**Certain documents cited**

**1. Certain published documents (Rules 43bis.1 and 70.10)**

Application No.  
Patent No.

Publication date  
(day/month/year)

Filing date  
(day/month/year)

Priority date (valid claim)  
(day/month/year)

**2. Non-written disclosures (Rule 43bis.1 and 70.9)**

Kind of non-written disclosure

Date of non-written disclosure  
(day/month/year)

Date of written disclosure  
referring to non-written disclosure  
(day/month/year)

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**Box No. VII**    **Certain defects in the international application**

The following defects in the form or contents of the international application have been noted :



**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made :

The following claims are unclear under Article 6 of the PCT because the following expressions are vague or ambiguous:

- Claim 1: "alternatively", "can be considered"
- Claim 5: "may be introduced", "its ordering precedence superceding"
- Claim 6: "may be introduced"
- Claim 7: "especially according to a method of one of ..."
- Claim 11: "may be introduced", "its ordering precedence superceding"
- Claim 12: "may be introduced"

Claims 2 and 6 are unclear under Article 6 of the PCT because they use acronyms (GBT). The first occurrence of an acronym should be explicitly defined in the claims.

The following claims are unclear under Article 6 of the PCT because the following expressions have no antecedents:

- Claim 1: "the voronoi region", "the closed area", "the vertices"
- Claim 15: "the geodesic globe"
- Claim 18: "the overlapping gridded data"

Claim 1 has more than one sentence (see line 20 of page 27).

Figure 12 is present in the drawings but not listed in the description contrary to Rule 5(a)(iv) of the PCT.

Figure 2 of the drawings should be labelled – PRIOR ART – as it shows a prior art method of locating spatial information on a rectangular grid.

**Supplemental Box**

**In case the space in any of the preceding boxes is not sufficient.  
Continuation of :**